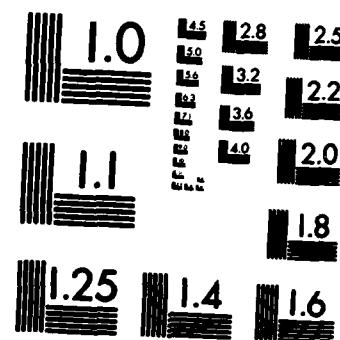


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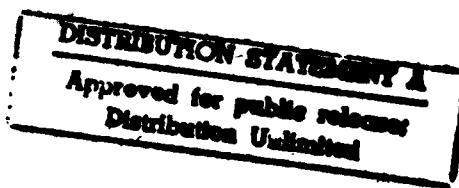
TITLE: ESMERALDAS-CLASS CORVETTES

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## ESMERALDAS-CLASS CORVETTES

Brauzzi, A. *Marine Militari*; *Rivista Marittima*; November 1982; pp. 99-104;  
Italian

On 7 August at the Muggiano plant in Spezia was delivered the corvette ESMERALDAS, the first of six ships being built at the Cantieri Navali Riuniti (CNR) for the Ecuadorian Navy. To underline the importance of the event for the South American navy, participating in the ceremony, in addition to high Italian and Ecuadorian political, diplomatic, and military personages, was Vice Admiral Mario Jaramillo, Commander General of the Navy, and Rear Admiral Santiago Coral, Commander of the Naval Squadron /Squadra Navale/. The six units of this class together with the three QUITO-Class guided missile boats armed with the EXOCET missile and three MANTA-Class torpedo boats (which will have their armament enhanced with the projected installation of Israeli GABRIEL missiles) will serve to provide a new look to the Ecuadorian Navy, composed until recently mainly of surplus combatants of other countries, and to form a naval force for coastal defense, supplemented by the German-built "209" submarines, which is very solid and effective and fully responsive to the defensive requirements of the country.

The series of ships, named after all the provinces of Ecuador, include:

--CM 11 ESMERALDAS, laid down 27 September 1979, launched 11 October 1980, and delivered 7 August 1982, builder CNR Muggiano;

--CM 12 MANABI, laid down 19 February 1980, launched 9 February 1981; fitting out at CNR Ancona;

--CM 13 EL ORO, laid down 20 March 1980, launched 9 February 1981; fitting out at CNR Ancona;

--CM 14 LOS RIOS, laid down 5 December 1979, launched 27 February 1981; fitting out at CNR Muggiano;

--CM 15 GALAPAGOS, laid down 4 December 1980, launched 4 July 1981; fitting out at CNR Muggiano;

--CM 16 LOJA, laid down 25 March 1981, launched 27 February 1982; fitting out at CNR Ancona.

The building program, on schedule so far, calls for the entire class to be operational by 1983.

The ESMERALDAS corvettes belong to the multi-purpose missile corvette 600-t design which the Cantieri Navali Riuniti have built and are still building in 16 units for foreign navies (Libya, Ecuador, Iraq) with four possible armament alternatives. In particular, they follow the development of the WADI Class produced for the Libyan Navy, a development in which the CNR, bearing in mind the results attained, tried to place the greatest emphasis on /100 the "multi-purpose" aspect typical of the kind of unit. Indeed, the corvettes represent an intermediate stage between the frigates and the light fast units (guided missile boats, torpedo boats, gunboats), borrowing, in great part, the features of the two types. They are capable of performing multiple missions,

either operating independently or in company with other units, in an environment where there is a multiple threat (surface, air, underwater); they are more economical than frigates, although having the same variety and completeness of armament in a rather limited displacement; they are fast and easy to handle, like small combat craft, but they are capable of withstanding rough sea conditions and can conduct quite protracted operations. Respecting the complete and advanced combat system with which they are furnished, a system which can stand up to those of larger units, the multi-purpose corvettes, thanks to their performance (speed endurance) and their sailing qualities (sea kindliness, stability, and maneuverability), find their most appropriate application in the operational tasks of interdiction of surface ships, of defense (and attack) by (and against) underwater units, of defense against surface ships, aircraft, and missiles.



ESMERALDAS in the Muggiano shipyard during the delivery ceremony to the Ecuadorian Navy

We were speaking of the greater versatility of the ESMERALDAS Class; this stress derives in great part from the availability of a helicopter platform which permits (though no assigned aircraft has been provided) accommodating a light AGUSTA AB 212 helicopter on board and furnishing it with the necessary support and refueling. Therefore, the possibility is provided of either conducting joint ASW actions, which are the most effective form of ASW, or to call on support from the helicopter for missile launchings against over-the-horizon targets, or to have advanced reconnaissance of enemy surface units. /101

In the enclosed table are listed the characteristics of the multi-purpose 600-t corvette with the differences provided in the various versions; two of them (fast attack and fast helicopter) havenot yet been produced.

The new corvette is, like the WADI, of the continuous deck type, prominently elevated at the bow to assure good sea kindliness. Close abaft the forward 76-mm gun rises the superstructure surmounted by a mast which supports the radar antenna for fire control of the guns. The after end of the bridge supports the ALBATROS launcher with storage for the four ASPIDE SA missiles, while on the forecastle deck are sited the two ILAS 3 triple torpedo tubes. The EXOCET missile launchers will be installed in the area directly behind, after which the deck is surmounted by the structure which supports the helicopter platform.

/103



The corvette WADI MRAGH (412) of the Libyan Navy. The ESMERALDAS are a development of the WADI Class (CNR).

MULTI PURPOSE MISSILE CORVETTE OF THE C.N.R.

Displacement, full	650 t	Engines: 4 MTU diesels - 4 propellers (WADI Class): MA 16 V 956
LOA	62.3 m	16,000 hp (11,768 kW); (ESMERALDAS Class): 20 V 956 TB 92
Length between perp.	57.8 m	24,000 hp (17,950 kW)
Beam	9.3 m	Electric generators: 3 of 250 kVA each
Molded depth	5.0 m	Speed: max. 37 kn, cruising 18 kn
		Endurance: 4000 miles/18 kn
		Range at 22 kn: 210 miles

WADI Class	ESMERALDAS Class	Fast Attack Version*	Fast Helicopter Version*
ARMAMENT			
	1/76/62 OT0-Melara; 1 40/70 BREDA BOFORS: 2 ILAS Torpedo Tubes		
4 OTOMAT	6 EXOCET MM 38	6 OTOMAT	2 OTOMAT
	--	DARDO Antimissile System	--
	4 ASPIDE (ALBATROS launcher)	4 ASPIDE (ALBATROS launcher)	4 ASPIDE (ALBATROS launcher)
	2	Helicopter platform SCLAR 105 rocket launcher	Helo platform + retractable hangar
ELECTRONICS			
Navigation radar:	DECCA TM 1226;	Sonar: THOMSON Diodon CSF;	Command and Control: IPN-10 (Selenia)
Fire control:	NA 10/2 (Elsag)	Fire control	Fire control
Surveillance radar:	RAN 11 L/X	Air surv. and navig. radar	Air surv. and navig. radar

COMPLEMENT			
56	49	?	?

\*Not yet produced

The combat system is internally controlled by the IPN 10 (selenia), into which feed all the sensors and the weapons of the ship. The weapons which the ESMERALDAS have give it a response capability commensurate with its dimensions against any type of threat: antiaircraft and antimissile with ASPIDE missiles and guns and automatic guns (76/62 and 40/70) respectively, antiship with guns and EXOCET missiles (with or without the assistance of a helicopter), anti-submarine with A'S torpedoes.

As to the power plant, we note the difference in power between that of the WADIs and that of the ESMERALDAS (16,000 hp versus 24,400 hp), which is not completely accounted for by the possible increase in displacement due to the helicopter structure, but which meets a precise request of the Ecuadorian Navy, for reasons of safety.

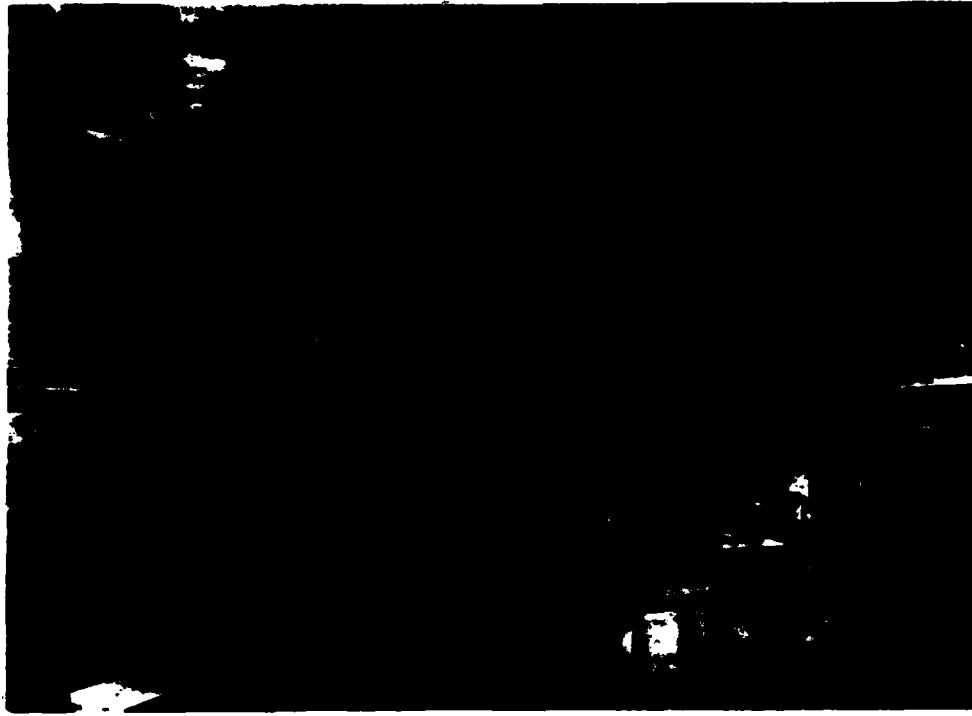
The power plant arrangement is the simplest possible: the four diesels are installed in two separate compartments, with each engine connected to its own shaft. Control is possible either locally or from the bridge.

The safety service has one fire main with eleven stations, fixed immersible electric pumps for suction and fire fighting, sprinklers in the ammunition rooms, power pumps on wheels, a stationary plant for the engine spaces which automatically determines the stoppage of the ventilating machinery and



ESMERALDAS during sea trials. Note the after helicopter platform and the ALBATROS launcher abaft the mast (CNR).

of the air intakes in case of fire. In addition, the engine spaces and the ammunition spaces are equipped with heat sensors and fire alarms.



The quadruple ALBATROS launcher for ASPIDE SA missile of Selenia, with which the ESMERALDAS corvettes are equipped

The helicopter platform, too, is equipped with a dual firefighting system. And finally the ship is designed so as to be able to sail at half speed even with one engine space flooded, and can maintain its stability and buoyancy even with two contiguous compartments flooded.

Despite the space limited by the dimensions of the ship, the standard of habitability, and of comfort was kept as high as possible in consideration of the long missions which the ship is intended to perform in equatorial waters. ESMERALDAS is equipped with electrohydraulically operated stabilizer fins (non-retractable), has water distilling equipment capable of producing about 5000 liters daily, provisions for at least two weeks at sea; all the working spaces and living quarters for 6 officers, 9 petty officers, and 34 men are adequately air conditioned.

The ESMERALDAS corvettes are delivered on a turn-key basis, following a, by now, well known standard of the CNRs and of the affiliated Italian shipyards; from the very first day of their acceptance into their navies they can be considered operational from a technical, logistical, and training point of view.

END

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